Service Schematics

NOKIA
6630

RM-1

Introduction

IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

"Service Schematics" was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. "Component finder", "Frequency band table" or "Antenna switch table".
The "Signal overview" page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

Nokia repair SW	:	Phoenix version 2004.32.6.62
Oscilloscope	:	Fluke PM 3380A/B
Spectrum Analyzer	:	Advantest R3162 with an analog probe
RF-Generator / GSM Tester	:	Rhode & Schwarz CMU 200
Multimeter	:	Fluke 73 Series II

While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA should be notified in writing.

Please send E-Mail to: training.sace@nokia.com



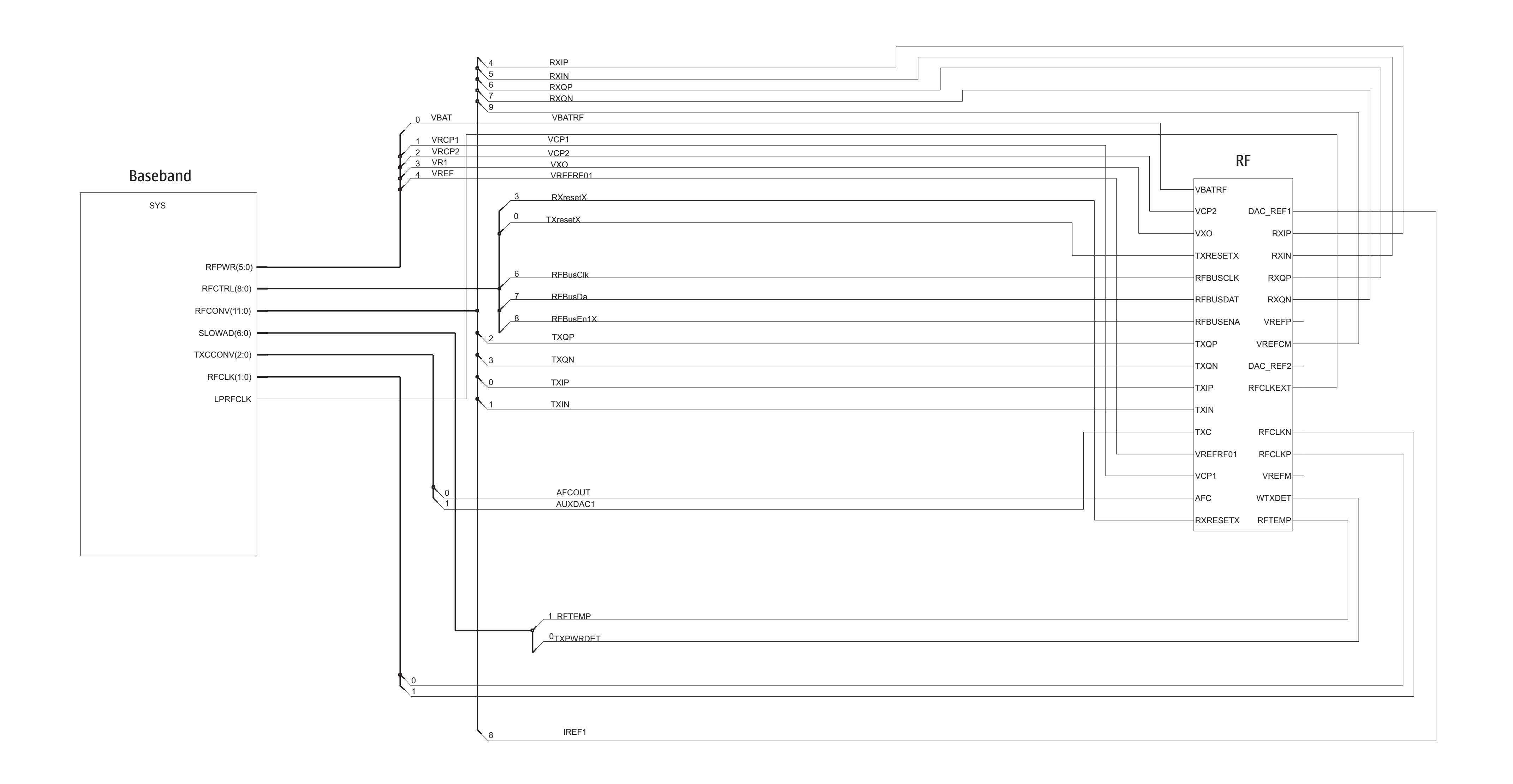
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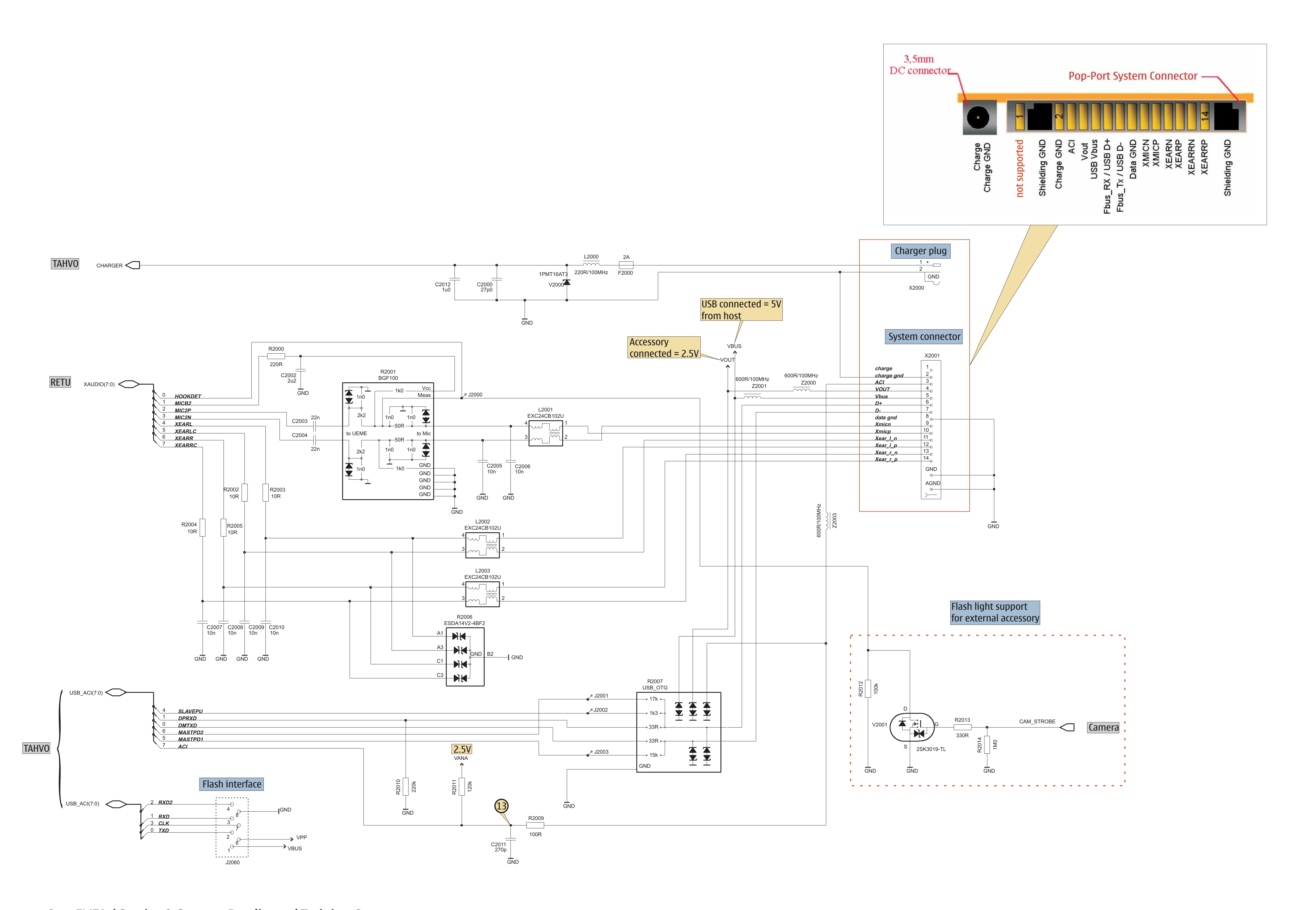
Exploded view and component disposal

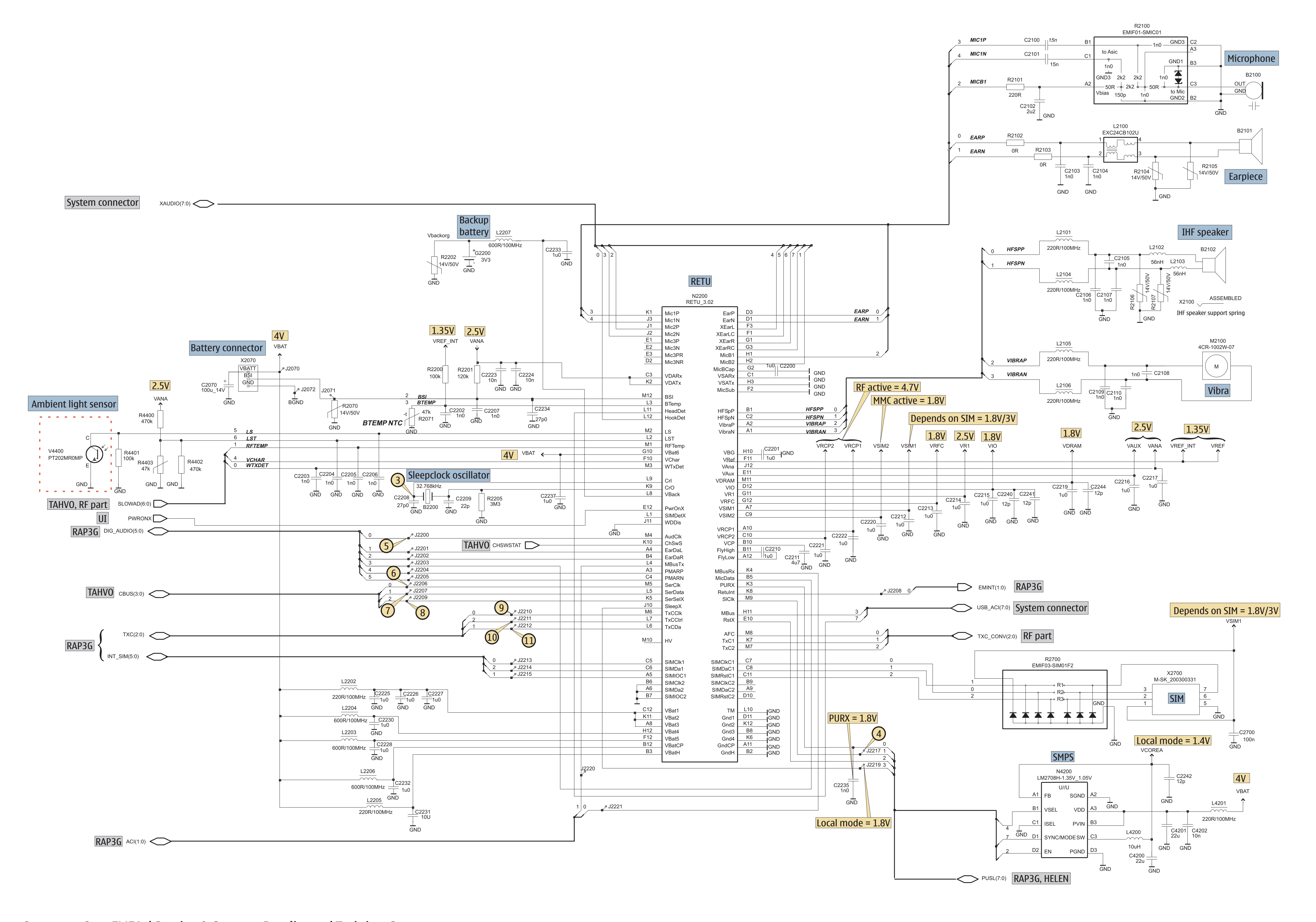
A-COVER I001
KEYMAT I002
7x SCREW I003
DOMESHEET (A1) * I006
LCD COVER SHIELD I004
UI PWB (A1) * I007
LCD MODULE I005
UI PWB ADHESIVE (A1) * I008
UI FRAME (A1) * I009
EARPIECE GASKET (A1) I011
EARPIECE (A1) I012
BB SHIELD (A1) * I010
ENGINE MODULE (not supplied) I013
CAMERA MODULE I014
VOICE KEY (A2) I022
CAMERA GASKET I015
VIBRA MOTOR (A2) I021
IHF SPEAKER (A2) I023
DC JACK (A2) I020
IHF GAUZE (A2) I024
MICROPHONE (A2) I019
MMC COVER (A2) I017
CHASSIS AUDIO ASSY (A2) I025 *
BLUETOOTH ANTENNA (A2) I018
POWER KEY (A2) I016
LOCKING SPRING (A2) I026
CAMERA WINDOW ASSY (A2) I027
WCDMA ANTENNA (A3) I028 *
CARD PLATE INCL. GROUND GASKET (A2) * I030
GSM ANTENNA (A3) I029 *
TYPE LABEL (Level 3/4 only) I031
BACK COVER (A4) * I032
CAMERA BEZEL (A4) * I033

A1= UI FRAME ASSY
A2= CHASSIS ASSY INCL. A3
A3= ANTENNA ASSY
A4= BACK COVER ASSY
* = ONLY AVAILABLE AS ASSEMBLY

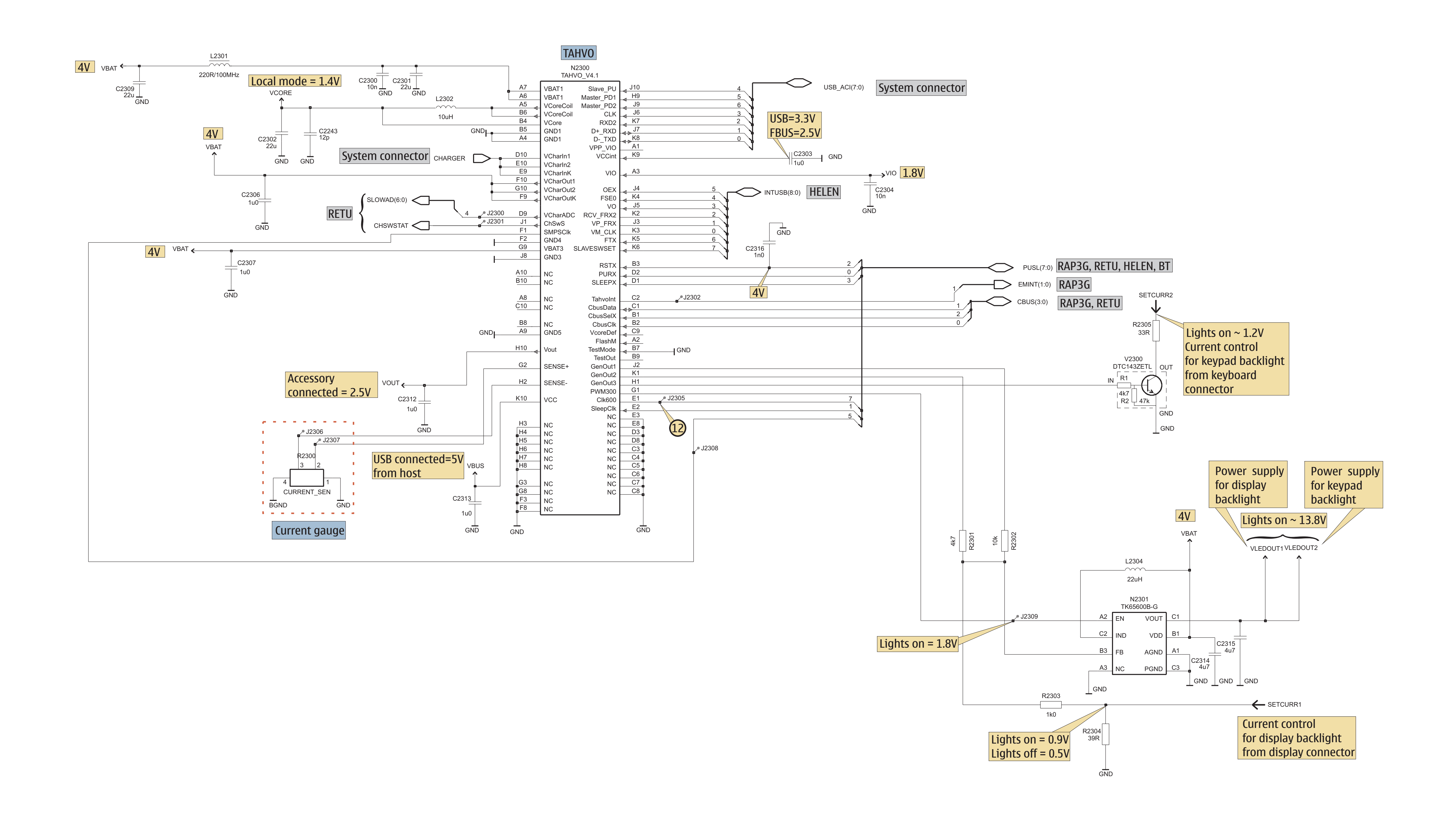
ELECTRO SILICONE METAL PLASTIC PWB COVER

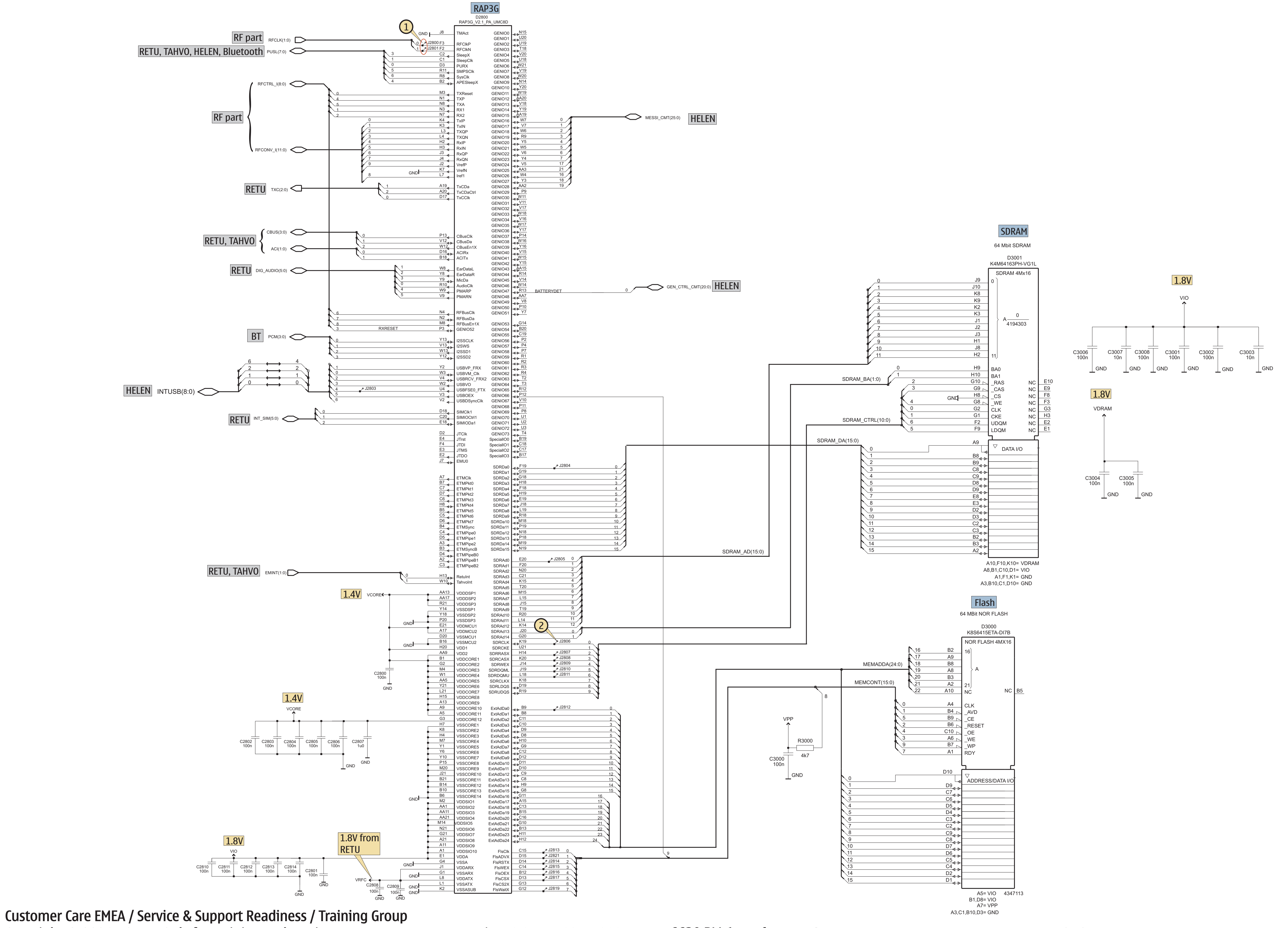

Baseband
SYS
RFPWR(5:0)
RFCTRL(8:0)
RFCONV(11:0)
SLOWAD(6:0)
TXCCONV(2:0)
RFCLK(1:0)
LPRFCLK
RXIP
RXIN
RXQP
RXQN
VBAT
VBATRF
VRCP1
VRCP2
VR1
VREF
VCP1
VCP2
VXO
VREFRF01
RXresetX
TXresetX
RFBusClk
RFBusDa
RFBusEn1X
TXQP
TXQN
TXIP
TXIN
AFCOUT
AUXDAC1
RFTEMP
TXPWRDET
IREF1
RF
VBATRF
VCP2
VXO
TXRESETX
RFBUSCLK
RFBUSDAT
RFBUSENA
TXQP
TXQN
TXIP
TXIN
TXC
VREFRF01
VCP1
AFC
RXRESETX
DAC_REF1
RXIP
RXIN
RXQP
RXQN
VREFP
VREFCM
DAC_REF2
RFCLKEXT
RFCLKN
RFCLKP
VREFM
WTXDET
RFTEMP

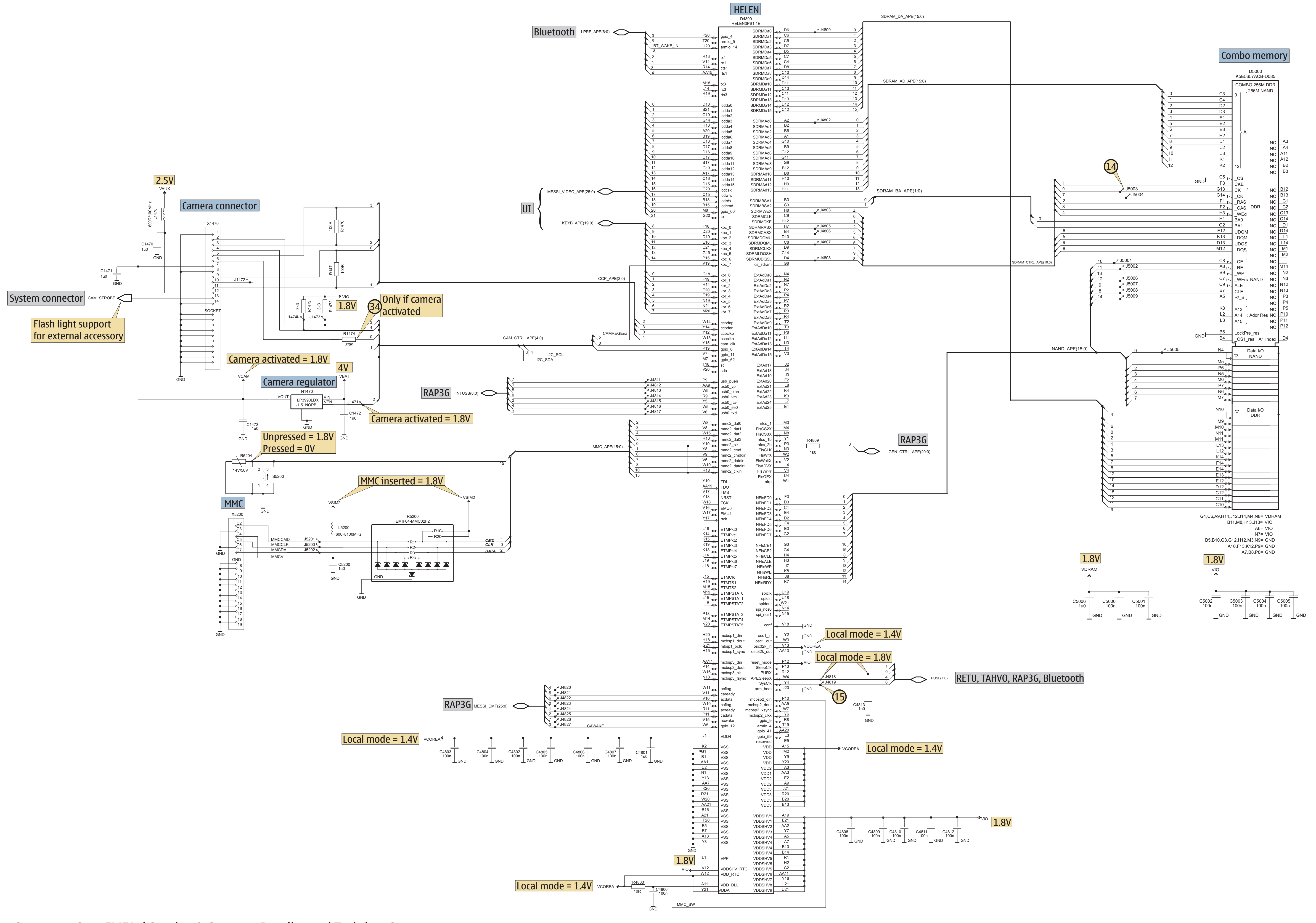

3,5mm
DC connector
Pop-Port System Connector
Charge
Charge GND
not supported
Shielding GND
Charge GND
ACI
Vout
USB Vbus
Fbus_RX / USB D+
Fbus_Tx / USB D-
Data GND
XMICN
XMICP
XEARN
XEARP
XEARRN
XEARRP
Shielding GND
Charger plug
System connector
USB connected = 5V from host
Accessory connected = 2.5V
TAHVO
CHARGER
RETU
XAUDIO(7:0)
HOOKDET
MIC2P
MIC2N
XEARL
XEARLC
XEARR
XEARRC
Flash light support for external accessory
Camera
CAM_STROBE
USB_ACI(7:0)
SLAVEPU
DPRXD
DMTXD
MASTPD2
MASTPD1
ACI
Flash interface
RXD2
RXD
CLK
TXD
VPP
VBUS
2.5V
VANA

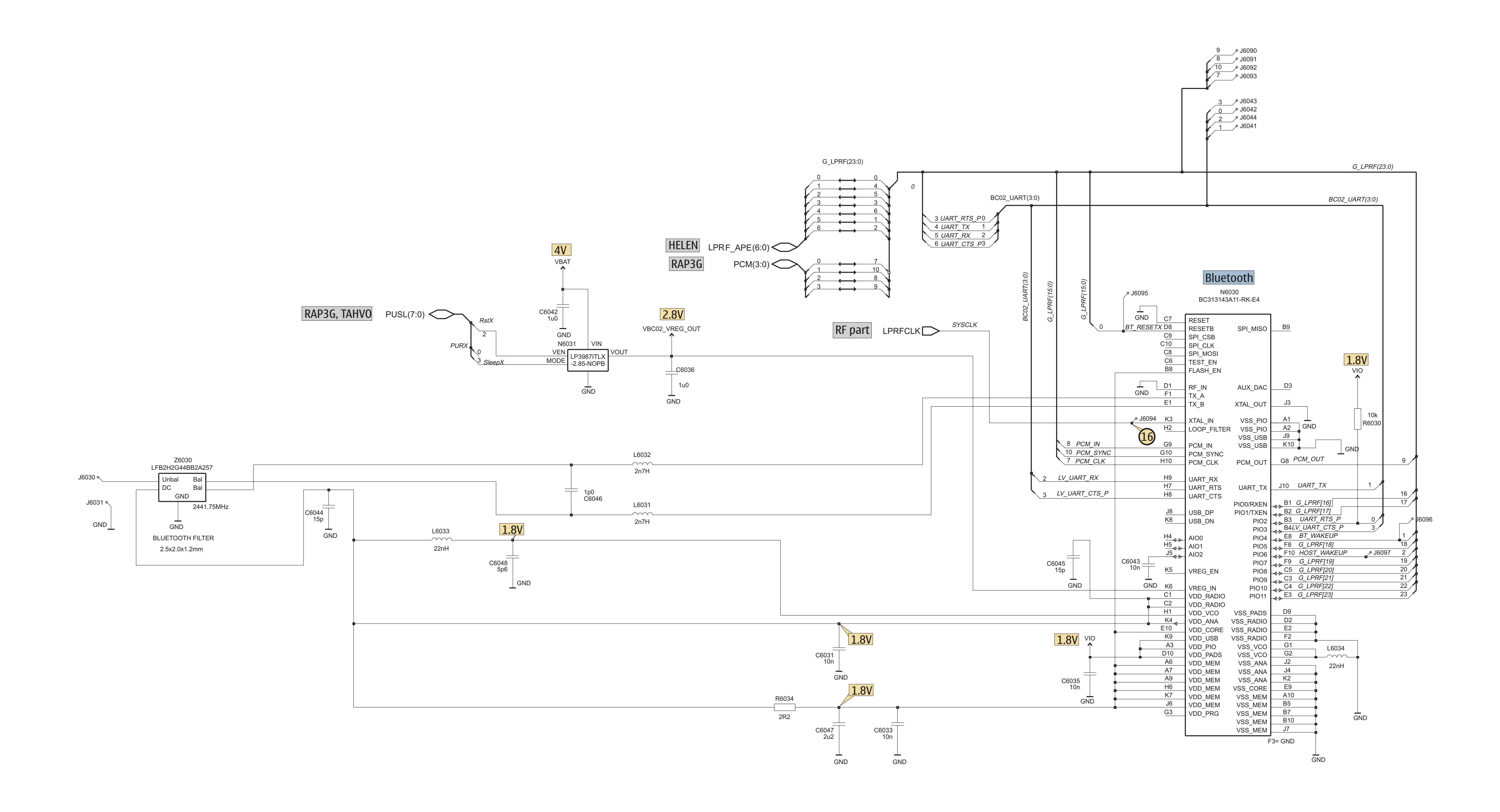


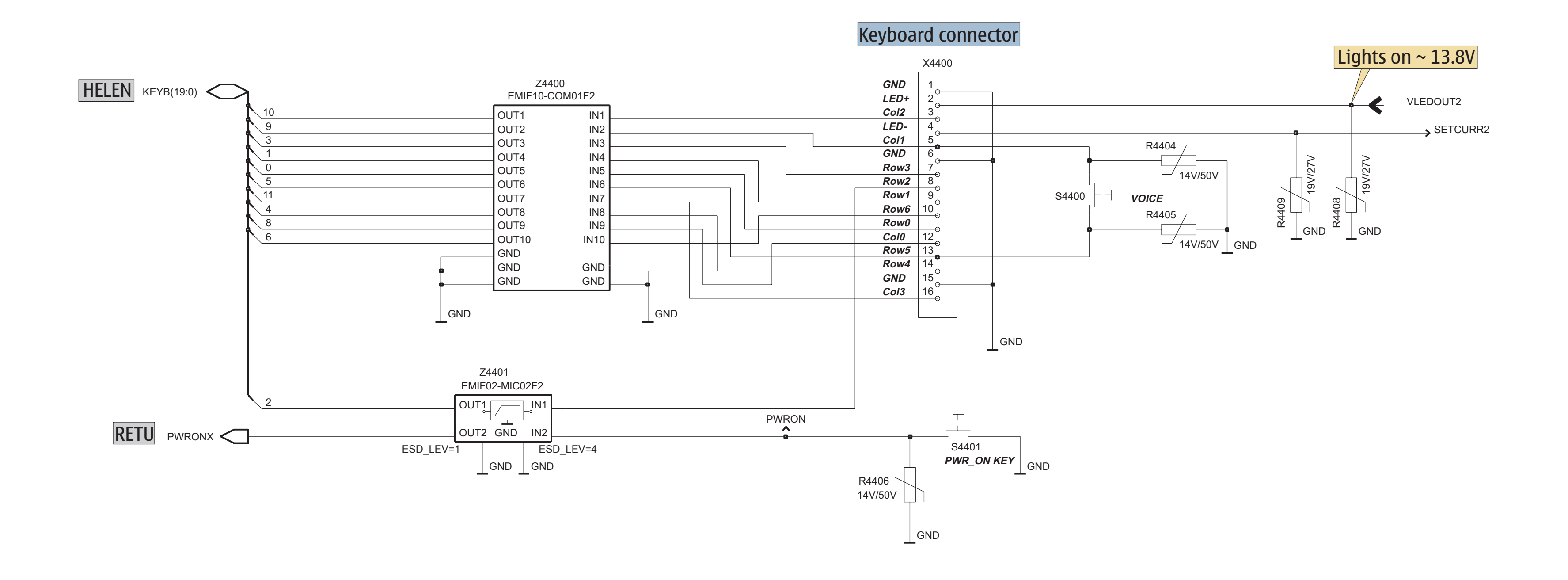
Microphone
Earpiece
System connector
Backup battery
IHF speaker
RETU
Battery connector
Ambient light sensor
Vibra
RF active = 4.7V
MMC active = 1.8V
Depends on SIM = 1.8V/3V
Sleepclock oscillator
BTEMP NTC
TAHVO, RF part
UI
RAP3G
TAHVO
SIM
SMPS
PURX = 1.8V
Local mode = 1.8V
Local mode = 1.4V
RF part
RAP3G, HELEN

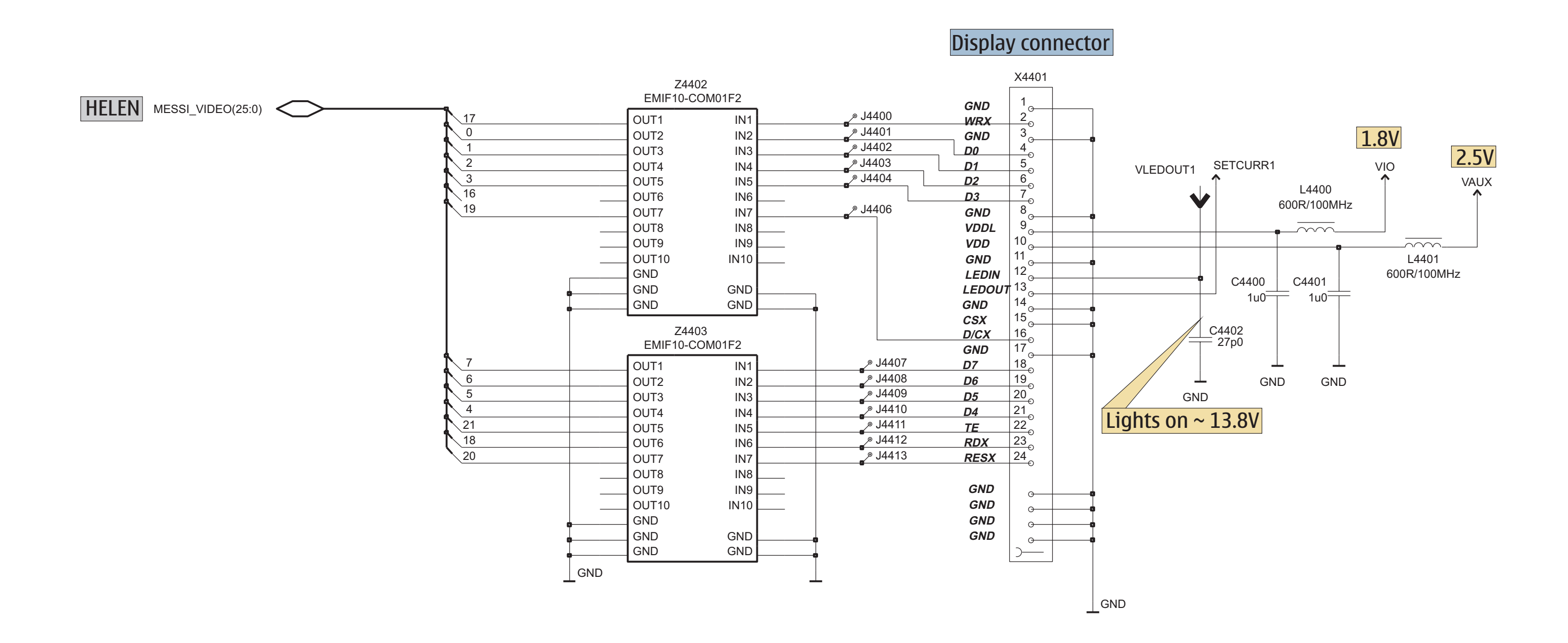

TAHVO
N2300
TAHVO_V4.1
4V
VBAT
L2301
220R/100MHz
Local mode = 1.4V
VCORE
C2300
10n
C2301
22u
L2302
10uH
C2309
22u
GND
C2302
22u
C2243
12p
System connector
CHARGER
C2306
1u0
RETU
SLOWAD(6:0)
CHSWSTAT
J2300
J2301
C2307
1u0
USB_ACI(7:0)
System connector
USB=3.3V
FBUS=2.5V
C2303
1u0
VIO
1.8V
C2304
10n
INTUSB(8:0)
HELEN
C2316
1n0
PUSL(7:0)
RAP3G, RETU, HELEN, BT
EMINT(1:0)
RAP3G
CBUS(3:0)
RAP3G, RETU
J2302
SETCURR2
R2305
33R
Lights on ~ 1.2V
Current control
for keypad backlight
from keyboard
connector
V2300
DTC143ZETL
Accessory
connected = 2.5V
VOUT
C2312
1u0
J2305
J2306
J2307
R2300
CURRENT_SEN
BGND
Current gauge
USB connected=5V
from host
VBUS
C2313
1u0
J2308
R2301
4k7
R2302
10k
Power supply
for display
backlight
Power supply
for keypad
backlight
Lights on ~ 13.8V
VLEDOUT1
VLEDOUT2
L2304
22uH
N2301
TK65600B-G
J2309
Lights on = 1.8V
C2315
4u7
C2314
4u7
R2303
1k0
SETCURR1
Lights on = 0.9V
Lights off = 0.5V
R2304
39R
Current control
for display backlight
from display connector

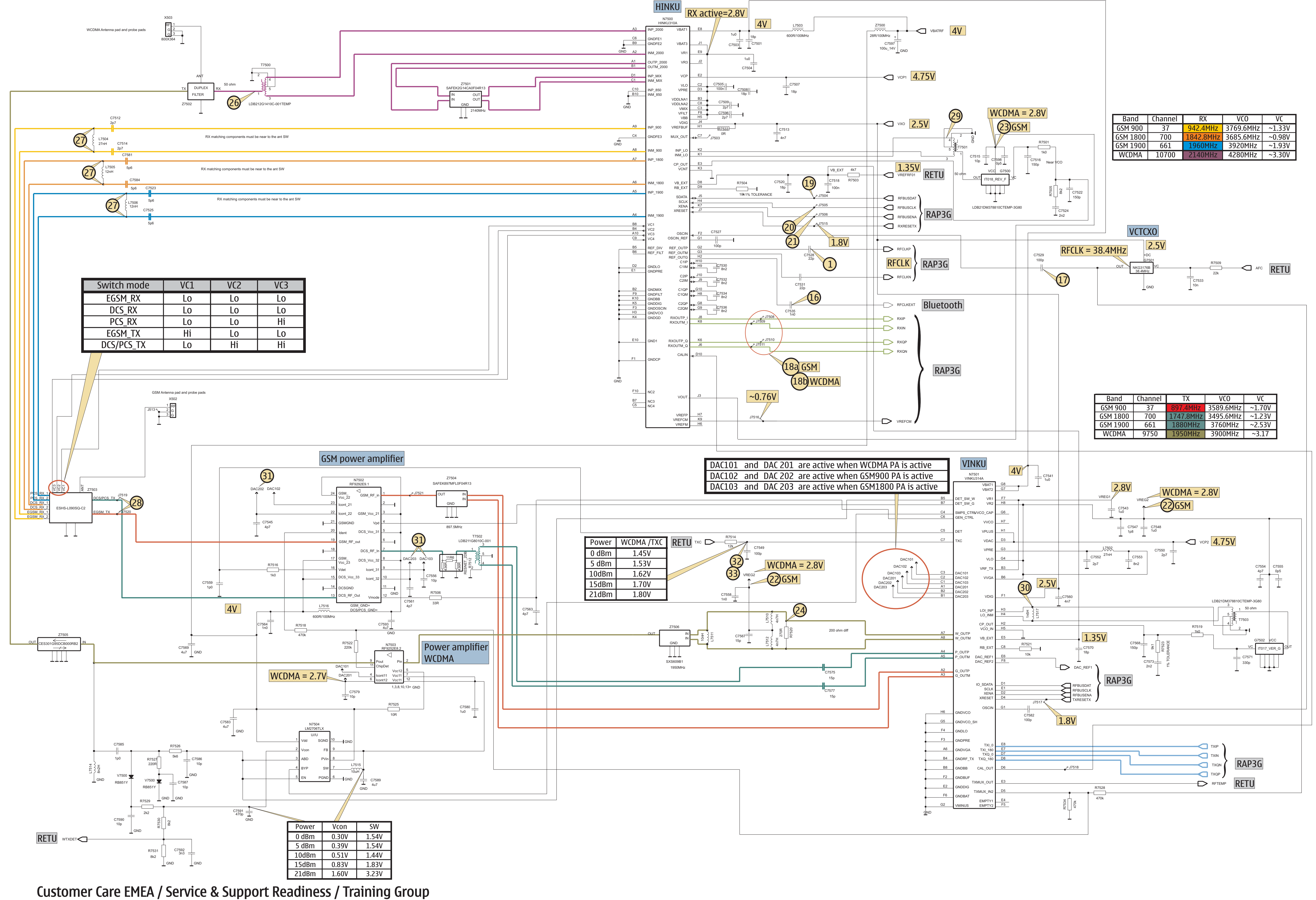

RAP3G
D2800
RAP3G_V2.1_PA_UMC8D
RF part
RETU, TAHVO, HELEN, Bluetooth
RF part
HELEN
RETU
RETU, TAHVO
RETU
HELEN
BT
HELEN
INTUSB(8:0)
RETU
SDRAM
64 Mbit SDRAM
D3001
K4M64163PH-VG1L
SDRAM 4Mx16
1.8V
VIO
1.8V
VDRAM
SDRAM_BA(1:0)
SDRAM_CTRL(10:0)
SDRAM_DA(15:0)
SDRAM_AD(15:0)
DATA I/O
A10,F10,K10= VDRAM
A8,B1,C10,D1= VIO
A1,F1,K1= GND
A3,B10,C1,D10= GND
RETU, TAHVO
1.4V
VCORE
1.4V
VCORE
Flash
64 MBit NOR FLASH
D3000
K8S6415ETA-DI7B
NOR FLASH 4MX16
MEMADDA(24:0)
MEMCONT(15:0)
VPP
R3000
4k7
C3000
100n
ADDRESS/DATA I/O
A5= VIO
B1,D8= VIO
A7= VPP
A3,C1,B10,D3= GND
4347113
1.8V
VIO
1.8V from
RETU
VRFC


HELEN
Bluetooth
Combo memory
UI
Camera connector
System connector
Flash light support for external accessory
Only if camera activated
Camera activated = 1.8V
4V
Camera regulator
Camera activated = 1.8V
RAP3G
Unpressed = 1.8V
Pressed = 0V
MMC
MMC inserted = 1.8V
RAP3G
Local mode = 1.4V
Local mode = 1.8V
RETU, TAHVO, RAP3G, Bluetooth
RAP3G
Local mode = 1.4V
Local mode = 1.4V
1.8V
Local mode = 1.4V
2.5V
1.8V
1.8V


Bluetooth
N6030
BC313143A11-RK-E4
HELEN
RAP3G
RAP3G, TAHVO
RF part
4V
2.8V
1.8V
LPRF_APE(6:0)
PCM(3:0)
PUSL(7:0)
LPRFCLK
G_LPRF(23:0)
BC02_UART(3:0)
Z6030
LFB2H2G44BB2A257
BLUETOOTH FILTER
2.5x2.0x1.2mm
2441.75MHz
N6031
LP3987ITLX
-2.85-NOPB
VBC02_VREG_OUT


Keyboard connector
Lights on ~ 13.8V
HELEN
KEYB(19:0)
Z4400
EMIF10-COM01F2
X4400
VLEDOUT2
SETCURR2
R4404
14V/50V
S4400
VOICE
R4405
R4409
19V/27V
R4408
GND
Z4401
EMIF02-MIC02F2
RETU
PWRONX
PWRON
ESD_LEV=1
ESD_LEV=4
S4401
PWR_ON KEY
R4406


Display connector
HELEN
MESSI_VIDEO(25:0)
Z4402
EMIF10-COM01F2
Z4403
EMIF10-COM01F2
X4401
VLEDOUT1
SETCURR1
1.8V
VIO
2.5V
VAUX
L4400
600R/100MHz
L4401
600R/100MHz
C4400
1u0
C4401
1u0
C4402
27p0
Lights on ~ 13.8V
GND



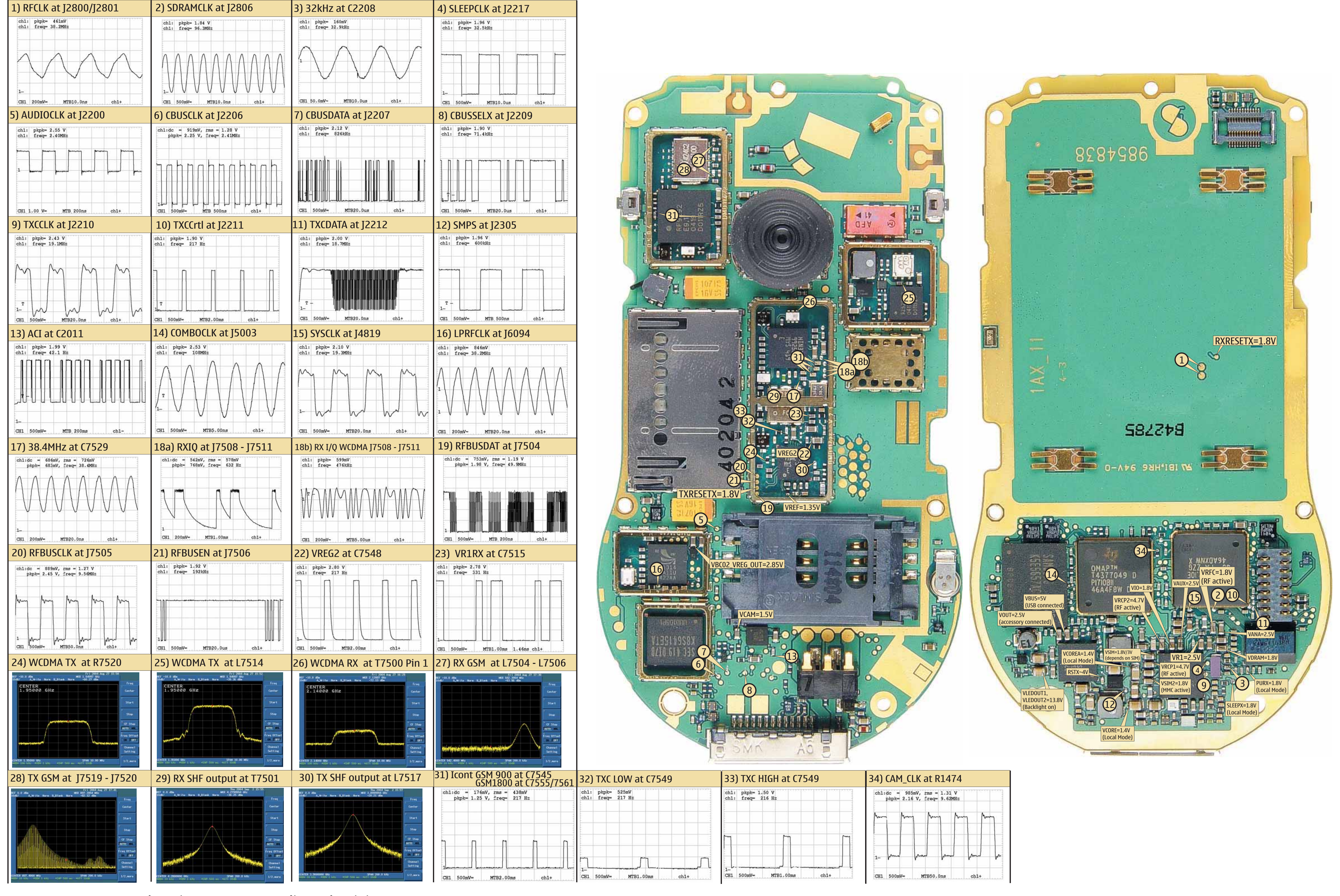
Switch mode	VC1	VC2	VC3
EGSM_RX	Lo	Lo	Lo
DCS_RX	Lo	Lo	Lo
PCS_RX	Lo	Lo	Hi
EGSM_TX	Hi	Lo	Lo
DCS/PCS_TX	Lo	Hi	Hi

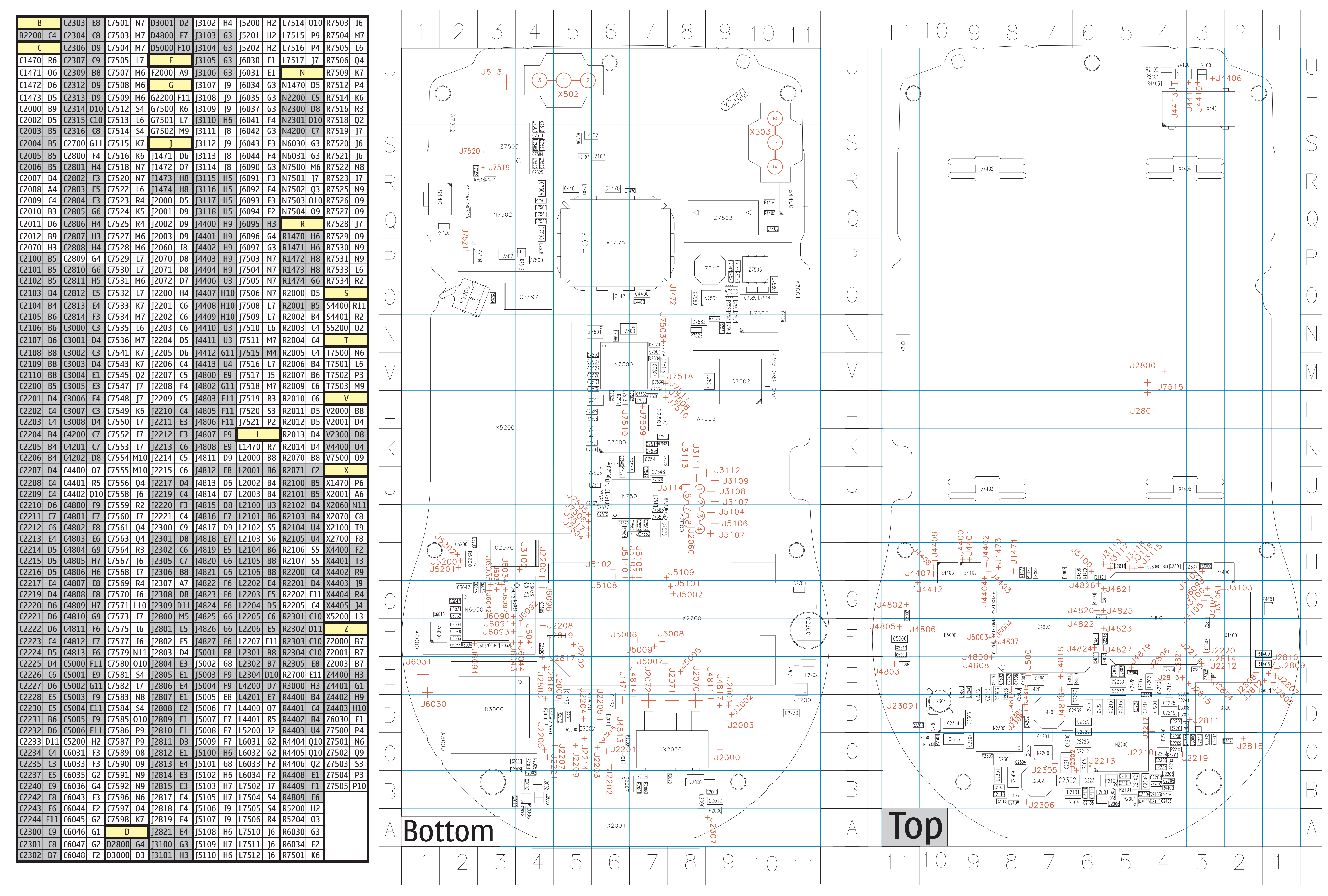
Band	Channel	RX	VCO	VC
GSM 900	37	942.4MHz	3769.6MHz	~1.33V
GSM 1800	700	1842.8MHz	3685.6MHz	~0.98V
GSM 1900	661	1960MHz	3920MHz	~1.93V
WCDMA	10700	2140MHz	4280MHz	~3.30V

Band	Channel	TX	VCO	VC
GSM 900	37	897.4MHz	3589.6MHz	~1.70V
GSM 1800	700	1747.8MHz	3495.6MHz	~1.23V
GSM 1900	661	1880MHz	3760MHz	~2.53V
WCDMA	9750	1950MHz	3900MHz	~3.17

Power	WCDMA /TXC
0 dBm	1.45V
5 dBm	1.53V
10dBm	1.62V
15dBm	1.70V
21dBm	1.80V

Power	Vcon	SW
0 dBm	0.30V	1.54V
5 dBm	0.39V	1.54V
10dBm	0.51V	1.44V
15dBm	0.83V	1.83V
21dBm	1.60V	3.23V


1) RFCLK at J2800/J2801
2) SDRAMCLK at J2806
3) 32kHz at C2208
4) SLEEPCLK at J2217
5) AUDIOCLK at J2200
6) CBUSCLK at J2206
7) CBUSDATA at J2207
8) CBUSSELX at J2209
9) TXCCLK at J2210
10) TXCCrtl at J2211
11) TXCDATA at J2212
12) SMPS at J2305
13) ACI at C2011
14) COMBOCLK at J5003
15) SYSCLK at J4819
16) LPRFCLK at J6094
17) 38.4MHz at C7529
18a) RXIQ at J7508 - J7511
18b) RX I/Q WCDMA J7508 - J7511
19) RFBUSDAT at J7504
20) RFBUSCLK at J7505
21) RFBUSEN at J7506
22) VREG2 at C7548
23) VR1RX at C7515
24) WCDMA TX at R7520
25) WCDMA TX at L7514
26) WCDMA RX at T7500 Pin 1
27) RX GSM at L7504 - L7506
28) TX GSM at J7519 - J7520
29) RX SHF output at T7501
30) TX SHF output at L7517
31) Icont GSM 900 at C7545
GSM1800 at C7555/7561
32) TXC LOW at C7549
33) TXC HIGH at C7549
34) CAM_CLK at R1474
TXRESETX=1.8V
VREF=1.35V
VREG2
VBC02_VREG_OUT=2.85V
VCAM=1.5V
RXRESETX=1.8V
VBUS=5V
(USB connected)
VOUT=2.5V
(accessory connected)
VIO=1.8V
VAUX=2.5V
VRFC=1.8V
(RF active)
VRCP2=4.7V
(RF active)
VANA=2.5V
VCOREA=1.4V
(Local Mode)
VSIM=1.8V/3V
(depends on SIM)
VR1=2.5V
VDRAM=1.8V
RSTX~4V
VRCP1=4.7V
(RF active)
VSIM2=1.8V
(MMC active)
PURX=1.8V
(Local Mode)
SLEEPX=1.8V
(Local Mode)
VLEDOUT1,
VLEDOUT2=13.8V
(Backlight on)
VCORE=1.4V
(Local Mode)



B		C2303	E8	C7501	N7	D3001	D2	J3102	H4	J5200	H2	L7514	O10	R7503	I6
B2200	C4	C2304	C8	C7503	M7	D4800	F7	J3103	G3	J5201	H2	L7515	P9	R7504	M7
C		C2306	D9	C7504	M7	D5000	F10	J3104	G3	J5202	H2	L7516	P4	R7505	L6
C1470	R6	C2307	C9	C7505	L7	F		J3105	G3	J6030	E1	L7517	J7	R7506	Q4
C1471	O6	C2309	B8	C7507	M6	F2000	A9	J3106	G3	J6031	E1	N		R7509	K7
C1472	D6	C2312	D9	C7508	M6	G		J3107	J9	J6034	G3	N1470	D5	R7512	P4
C1473	D5	C2313	D9	C7509	M6	G2200	F11	J3108	J9	J6035	G3	N2200	C5	R7514	K6
C2000	B9	C2314	D10	C7512	S4	G7500	K6	J3109	J9	J6037	G3	N2300	D8	R7516	R3
C2002	D5	C2315	C10	C7513	L6	G7501	L7	J3110	H6	J6041	F4	N2301	D10	R7518	Q2
C2003	B5	C2316	C8	C7514	S4	G7502	M9	J3111	J8	J6042	G3	N4200	C7	R7519	J7
C2004	B5	C2700	G11	C7515	K7	J		J3112	J9	J6043	F3	N6030	G3	R7520	J6
C2005	B5	C2800	F4	C7516	K6	J1471	D6	J3113	J8	J6044	F4	N6031	G3	R7521	J6
C2006	B5	C2801	H4	C7518	N7	J1472	O7	J3114	J8	J6090	G3	N7500	M6	R7522	N8
C2007	B4	C2802	F3	C7520	N7	J1473	H8	J3115	H5	J6091	F3	N7501	J7	R7523	I7
C2008	A4	C2803	E5	C7522	L6	J1474	H8	J3116	H5	J6092	F4	N7502	Q3	R7525	N9
C2009	C4	C2804	E3	C7523	R4	J2000	D5	J3117	H5	J6093	F3	N7503	O10	R7526	O9
C2010	B3	C2805	G6	C7524	K5	J2001	D9	J3118	H5	J6094	F2	N7504	O9	R7527	O9
C2011	D6	C2806	H4	C7525	R4	J2002	D9	J4400	H9	J6095	H3	R		R7528	J7
C2012	B9	C2807	H3	C7527	M6	J2003	D9	J4401	H9	J6096	G4	R1470	H6	R7529	O9
C2070	H3	C2808	H4	C7528	M6	J2060	I8	J4402	H9	J6097	G3	R1471	H6	R7530	N9
C2100	B5	C2809	G4	C7529	L7	J2070	D8	J4403	H9	J7503	N7	R1472	H8	R7531	N9
C2101	B5	C2810	G6	C7530	L7	J2071	D8	J4404	H9	J7504	N7	R1473	H8	R7533	L6
C2102	B5	C2811	H5	C7531	M6	J2072	D7	J4406	U3	J7505	N7	R1474	G6	R7534	R2
C2103	B4	C2812	E5	C7532	L7	J2200	H4	J4407	H10	J7506	N7	R2000	D5	S	
C2104	B4	C2813	E4	C7533	K7	J2201	C6	J4408	H10	J7508	L7	R2001	B5	S4400	R11
C2105	B6	C2814	F3	C7534	M7	J2202	C6	J4409	H10	J7509	L7	R2002	B4	S4401	R2
C2106	B6	C3000	C3	C7535	L6	J2203	C6	J4410	U3	J7510	L6	R2003	C4	S5200	O2
C2107	B6	C3001	D4	C7536	M7	J2204	D5	J4411	U3	J7511	M7	R2004	C4	T	
C2108	B8	C3002	C3	C7541	K7	J2205	D6	J4412	G11	J7515	M4	R2005	C4	T7500	N6
C2109	B8	C3003	D4	C7543	K7	J2206	C4	J4413	U4	J7516	L7	R2006	B4	T7501	L6
C2110	B8	C3004	E1	C7545	Q2	J2207	C5	J4800	E9	J7517	I5	R2007	B6	T7502	P3
C2200	B5	C3005	E3	C7547	J7	J2208	F4	J4802	G11	J7518	M7	R2009	C6	T7503	M9
C2201	D4	C3006	E4	C7548	J7	J2209	C5	J4803	E11	J7519	R3	R2010	C6	V	
C2202	C4	C3007	C3	C7549	K6	J2210	C4	J4805	F11	J7520	S3	R2011	D5	V2000	B8
C2203	C4	C3008	D4	C7550	I7	J2211	E3	J4806	F11	J7521	P2	R2012	D5	V2001	D4
C2204	B4	C4200	C7	C7552	I7	J2212	E3	J4807	F9	L		R2013	D4	V2300	D8
C2205	B4	C4201	C7	C7553	I7	J2213	C6	J4808	E9	L1470	R7	R2014	D4	V4400	U4
C2206	B4	C4202	D8	C7554	M10	J2214	C5	J4811	D9	L2000	B8	R2070	B8	V7500	O9
C2207	D4	C4400	O7	C7555	M10	J2215	C6	J4812	E8	L2001	B6	R2071	C2	X	
C2208	C4	C4401	R5	C7556	Q4	J2217	D4	J4813	D6	L2002	B4	R2100	B5	X1470	P6
C2209	C4	C4402	Q10	C7558	J6	J2219	C4	J4814	D7	L2003	B4	R2101	B5	X2001	A6
C2210	D6	C4800	F9	C7559	R2	J2220	F3	J4815	D8	L2100	U3	R2102	B4	X2060	N11
C2211	C7	C4801	E7	C7560	I7	J2221	C4	J4816	E7	L2101	B6	R2103	B4	X2070	C8
C2212	C6	C4802	E8	C7561	Q4	J2300	C9	J4817	D9	L2102	S5	R2104	U4	X2100	T9
C2213	E4	C4803	E6	C7563	Q4	J2301	D8	J4818	E7	L2103	S6	R2105	U4	X2700	F8
C2214	D5	C4804	G9	C7564	R3	J2302	C6	J4819	E5	L2104	B6	R2106	S5	X4400	F2
C2215	D5	C4805	H7	C7567	J6	J2305	C7	J4820	G6	L2105	B8	R2107	S5	X4401	T3
C2216	D5	C4806	H6	C7568	I7	J2306	B8	J4821	G6	L2106	B8	R2200	C4	X4402	R9
C2217	E4	C4807	E8	C7569	R4	J2307	A7	J4822	F6	L2202	E4	R2201	D4	X4403	J9
C2219	D4	C4808	E8	C7570	I6	J2308	D8	J4823	F6	L2203	E5	R2202	E11	X4404	R4
C2220	D6	C4809	H7	C7571	L10	J2309	D11	J4824	F6	L2204	D5	R2205	C4	X4405	J4
C2221	D6	C4810	G9	C7573	I7	J2800	M5	J4825	G6	L2205	C6	R2301	C10	X5200	L3
C2222	D6	C4811	F6	C7575	I6	J2801	L5	J4826	G6	L2206	E5	R2302	D11	Z	
C2223	C4	C4812	E7	C7577	I6	J2802	F5	J4827	F6	L2207	E11	R2303	C10	Z2000	B7
C2224	D5	C4813	E6	C7579	N11	J2803	D4	J5001	E8	L2301	B8	R2304	C10	Z2001	B7
C2225	D4	C5000	F11	C7580	O10	J2804	E3	J5002	G8	L2302	B7	R2305	E8	Z2003	B7
C2226	C6	C5001	E9	C7581	S4	J2805	E1	J5003	F9	L2304	D10	R2700	E11	Z4400	H3
C2227	D6	C5002	G11	C7582	I7	J2806	E4	J5004	F9	L4200	D7	R3000	H3	Z4401	G1
C2228	E5	C5003	F9	C7583	N8	J2807	E1	J5005	E8	L4201	E7	R4400	B4	Z4402	H9
C2230	E5	C5004	E11	C7584	S4	J2808	E2	J5006	F7	L4400	O7	R4401	C4	Z4403	H10
C2231	B6	C5005	E9	C7585	O10	J2809	E1	J5007	E7	L4401	R5	R4402	B4	Z6030	F1
C2232	D6	C5006	F11	C7586	P9	J2810	E1	J5008	F7	L5200	I2	R4403	U4	Z7500	P4
C2233	D11	C5200	H2	C7587	P9	J2811	D3	J5009	F7	L6031	G2	R4404	Q10	Z7501	N6
C2234	C4	C6031	F3	C7589	O8	J2812	E1	J5100	H6	L6032	G2	R4405	Q10	Z7502	Q9
C2235	C3	C6033	F3	C7590	O9	J2813	E4	J5101	G8	L6033	F2	R4406	Q2	Z7503	S3
C2237	E5	C6035	G2	C7591	N9	J2814	E3	J5102	H6	L6034	F2	R4408	E1	Z7504	P3
C2240	E9	C6036	G4	C7592	N9	J2815	E3	J5103	H7	L7502	I7	R4409	F1	Z7505	P10
C2242	E8	C6043	F3	C7596	N6	J2817	E4	J5105	H7	L7504	S4	R4809	E6		
C2243	F6	C6044	F2	C7597	O4	J2818	E4	J5106	I9	L7505	S4	R5200	H2		
C2244	F11	C6045	G2	C7598	K7	J2819	F4	J5107	I9	L7506	R4	R5204	O3		
C2300	C9	C6046	G1	D		J2821	E4	J5108	H6	L7510	J6	R6030	G3		
C2301	C8	C6047	G2	D2800	G4	J3100	G3	J5109	H7	L7511	J6	R6034	F2		
C2302	B7	C6048	F2	D3000	D3	J3101	H3	J5110	H6	L7512	J6	R7501	K6		